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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/165,248 10/01/98 RATHI

S AMAT/2966/PD

PATENT COUNSEL
APPLIED MATERIALS INC
P O BOX 450-A
SANTA CLARA CA 95052

MMC1/0425

EXAMINER

FOURSON III, G

ART UNIT

PAPER NUMBER

2823

DATE MAILED:

04/25/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application N .

09/165,248

Applicant(s)

RATHI ET AL.

Examiner

George R Fourson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 23-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.5.10.12, 15
- 18) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

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This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

- I. Claims 1-22, drawn to processes, classified in Class 438, subclass 778.
- II. Claims 23-27, drawn to devices, classified in Class 148, subclass 33.3.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (M.P.E.P. § 806.05(f)). In the instant case the process as claimed can be used to produce another materially different product such as one which does not comprise a semiconductor substrate.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification and because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a personal interview with Ms Pat Verlangieri on February 20, 2001 a provisional election was made with traverse to prosecute the invention of group I, claims 1-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-27 stand withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

1. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 2, the claim should be amended to read "a) introducing silicon in the form of a silicon containing compound, carbon in the form of a carbon containing compound and..." in view of claim 2, for example, which indicates that the claim is open to the silicon being in the form of a compound. Alternatively, the step of claim 2 should be indicated to be an additional step to those of claim 1. Similar change should be made in claim 15. In claim 3, for example, it is questioned which compounds are encompassed by "a methylsilane". In claim 7, it is questioned what is recited through use of "effective".

2. Claims 8,9,14 and 19 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The property of the layer recited in claim 8 is inherent in all SiC layers due to subjectivity associated with the property recited. The property of claim 9 is not a material property or a property of the structure of

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a layer produced by the process of claim 1 but depends on other parameters such as time of diffusion. The property of claim 14 is not a material property or a property of the structure of a layer produced by the process of claim 1 but depends on other parameters such as the identity of the other layer intended by the comparison and the etch conditions. The property of the layer recited in claim 19 is inherent in all SiC layers due to subjectivity associated with the property recited.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3,8,9,14,15,16,19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Endo et al 4,532,150.

6. Endo et al discloses deposition of SiC by plasma decomposition of methylsilane alone as source of Si and C with helium or argon carrier gas at 50-500°C, pressure less than 10 Torr and 10-100 kW Rf power (col.3, lines 12,30-32 and col.4, lines 1-27).

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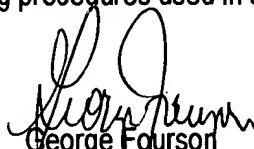
7. Claims 4-7, 10-13, 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Endo et al as applied to claims 1-3, 8, 9, 14, 15, 16, 19 and 22 above, and further in view of the following comments.

The choice of particular temperature, pressure, source gas and noble gas flow rates and Rf power would have been a matter of routine optimization within the teachings of the reference, these parameters having been known prior to applicant's invention to be separately variable to produce variations in the product resulting from the process of the instant invention. The SiC film so produced would have the property recited in claim 7 because the same materials would be treated in the same manner as in the instant invention.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956. See MPEP 203.08.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner George Fourson whose telephone number is (703) 308-2544. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (703) 308-4918. The fax number for this group is (703) 308-7722 (7724, 3431 and 3432). MPEP 502.01 contains instructions regarding procedures used in submitting responses by facsimile transmission.


George Fourson
Primary Examiner
Art Unit 2823

GFourson
April 22, 2001